Financial Reporting Quality, Executive Stock Options and Business Ethics

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***Abstract*— This paper tests the improvement of financial reporting quality when firms award stock options to their executives. The originality of this study is that we introduce the moderating effect of business ethics in the model. The sample is made up of 116 Canadian high-technology firms with available data for the fiscal year ending in 2012. We define the quality of financial reporting as the value relevance of accounting information as developed by Ohlson. Our results show that executive stock option award alone does not improve the quality of financial reporting. Rather, the quality improves when a firm awards stock options to its executives and investors perceive that the level of business ethics in that firm is high.**

***Keyword—value relevance; high-tech firms; stock options; business ethics*.**

I. INTRODUCTION

Executive stock option plans were popularized by successful IT firms. Executive stock option award can be explained by agency theory. This theory states that the interests of executives and shareholders should be aligned to reduce conflicts of interest between them. The holding of stock options by corporate managers thus helps resolve agency conflicts by aligning the firm's managerial decisions with shareholders' interests.

However, awarding stock options to executives has had perverse effects. The Enron and Nortel scandals in the United States and Canada have shown that to artificially inflate the share price of their firms and therefore exercise their stock options for substantial gains, executives are willing to do anything, including fraudulently manipulating financial statements. Also, back dating scandals received extensive coverage in the financial newspapers in the 2000s, especially in the United States (see, for example [1] and [2]).The business ethics of the executives involved in these scandals have been severely questioned. Are these behaviors exceptions or are they the reality of most firms?

The objective of this paper is to examine the effect of executive stock option award on the quality of financial reporting. We define the quality of financial reporting by the value relevance of accounting information, following Ohlson's model [3] in which a company's share value depends on the book value of equity and earnings. The original contribution of this paper is that we introduce the moderating effect of the perceived level of executives' business ethics in the value relevance model.

II. LITERATURE REVIEW

A. Value Relevance of Accounting Information

The model frequently used to test the relevance of accounting information is that developed by Ohlson [3 and 4]. In this model, net accounting earnings and the book value of equity explain the company's market value. Reference [5] conducted a longitudinal study that covers 115,154 US observations (company years), and found that the value relevance of accounting information has evolved over the 1953-1993 period. Whereas at the start of the period the net earnings and the book value of equity were of equal importance in the relationship between market value and accounting information, the importance of the book value of equity subsequently increased, disproportionately with that of net earnings.

The current state of knowledge reinforces the importance of the book value of equity to the detriment of net earnings when one examines the association between market value and accounting information reported. To improve the observed relevance of accounting information, some studies have added other independent variables to Ohlson's original model [3].

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B. Financial Reporting Quality and Executive Stock Option Award

To our knowledge, no previous study has examined whether investors' perception of the quality of accounting information reported changes when the company issues executive stock options. Scandals reported in the previous section could have a negative effect on the perceptions of readers of financial statements.

Some studies have examined the value relevance of the way executive stock options are presented in published financial statements [6], [7]. These studies compared value relevance when options are measured and presented in financial statements as components of equity, and when options are presented only in notes to financial statements. Most authors have found that presentation in equity is perceived more favorably by capital markets because it allows a more significant association between accounting information and share price.

C. Financial Reporting Quality and Executives'Business Ethics

Executives' business ethics are difficult to observe. The majority of firms have their own code of ethics, typically found in the section reserved for investors on their website. However, because of information asymmetry between managers and investors, publishing a code of ethics does not guarantee that every manager of a firm abides by this code of ethics.

Reference [8] examined the association between business ethics and financial reporting quality. Business ethics was proxied by diversity management in line with the ratings of Jantzi Research, a provider of social and governance research for institutional investors. A positive association between diversity management and financial reporting quality was documented.

In the absence of a direct measure of the level of executives' business ethics, we introduce the level of business ethic as perceived by investors. We identify from the management proxy circular, which firm has taken concrete actions to ensure that its executives comply with their code of ethics. These actions range from the appointment of a compliance officer that ensures compliance with the code of ethics to establishment of a whistleblower policy guaranteeing anonymity and protection of whistleblowers who report executives' unethical behaviors.

III. RESEARCH METHOD

A. Variable Definitions

The variables used in the empirical models in the next section are defined as follows:

$Price_i$: the market value per share, or price per share of firm i's equity three months after the end of the fiscal year 2012. This grace period after the end of the fiscal year is considered as the period in which the capital market finishes integrating all of the accounting information from the fiscal year (announcement of earnings in newspapers and publication of audited financial statements). This period should be as short as possible to avoid the integration of subsequent information.

EPS_i: earnings per share for firm i at the end of the fiscal year 2012.

BVS_i: book value of equity per share for firm i at the end of the fiscal year 2012.

OPT_i: dummy variable taking the value of 1 if firm i awards executives stock options in fiscal year 2012, and 0 otherwise.

ETH_i: dummy variable taking the value of 1 if firm i has taken concrete actions to ensure that its executives comply with their code of ethics during fiscal year 2012, and 0 otherwise.

$Size_i$: firm i size calculated as the natural logarithm of total assets at the end of fiscal year 2012.

Lev_i: firm i leverage calculated as the ratio of long-term debt to total assets at the end of fiscal year 2012.

$Growth_i$: the ratio of the market value to the book value of equity of firm i at the end of fiscal year 2012.

$Loss_i$: dummy variable included in the regression models to account for negative net earnings for the fiscal year 2012.

ε_i: the residual from the model.

With regard to the variable OPT, when it takes the value of 0 for the fiscal year 2012, the preceding four years were checked to ensure that the firm did not award stock options to its executives.

B. Empirical Models

From the basic model of Ohlson [3], which empirically tests the value relevance of accounting information, we will proceed in stages. From Equation 1 to Equation 5, we will gradually include the relevant variables in our model.

$$Price_i = a + bEPS_i + cBVS_i + \varepsilon_i \quad (1)$$

Equation (1) is the basic model that tests the value relevance of the book value (BVS) of a firm in a given year. The Ohlson model [3] includes the variable EPS. We expect the coefficients b and c to be positive and significant.

$$Price_i = a + bEPS_i + cBVS_i + dSize_i + eLev_i + fGrowth_i + gLoss_i + \varepsilon_i \quad (2)$$

Equation (2) includes all the control variables chosen according to the literature on value relevance (see [9] and [10]). We do not predict the sign of the coefficient d. Reference [11] stated that although firm size affects prices, the sign of the association tends to vary across studies. We do not predict the sign of coefficient e. Reference [10] predicts that leverage negatively affects prices because high leverage means high risk. However, leverage can also improve prices when perceived as a governance mechanism ([12]). According to [10], growth is positively associated with prices because the stock of a firm with growth opportunities is expected to increase in the future. Finally, the variable Loss is expected to be negatively associated with prices. According to [11], in case of losses, prices take lower values.

$$Price_i = a + bEPS_i + cBVS_i + dBVS*OPT + eSize_i + fLev_i + gGrowth_i + hLoss_i + \varepsilon_i \quad (3)$$

Equation (3) tests if the quality of financial reporting improved as a result of the awarding of stock options to executives. We do not predict the sign of coefficient d. Indeed, because of the recent scandals relating to executive stock option award, investors may not react positively to accounting information.

$$Price_i = a + bEPS_i + cBVS_i + dBVS*OPT + eBVS*ETH + fSize_i + gLev_i + hGrowth_i + jLoss_i + \varepsilon_i \quad (4)$$

Equation (4) tests if the quality of financial reporting improved as a result of a high level of perceived business ethics. According to the results obtained by [8], we expect the coefficient e to be positive and significant.

$$Price_i = a + bEPS_i + cBVS_i + dBVS*OPT + eBVS*ETH + fBVS*OPT*ETH + gSize_i + hLev_i + jGrowth_i + kLoss_i + \varepsilon_i \quad (5)$$

Equation (5) constitutes the contribution of the present study to the literature: it tests the moderating effect of the level of business ethics on the quality of financial reporting when firms award executives stock options. We expect the coefficient f to be positive and significant.

C. Sample

The initial sample is made up of Canadian high-tech companies taken from the Stock Guide database for the fiscal year 2012. This sector was selected because companies therein have already been examined in the literature on the value relevance of accounting information ([13], [14], [15]). Many firms in this sector grant executive stock options.

The initial sample comprised 124 firms. Further selection was based on the availability of data for each firm in the various data sources. The final sample includes 116 Canadian IT firms.

D. Data sources

All financial data were obtained from the latest available financial statements of the Stock Guide database, 2012 version. Fiscal year end ranges from March 31, 2012 to December 31, 2012. The variables OPT and ETH were collected manually from management proxy circulars available in the SEDAR (System for Electronic Document Analysis and Retrieval) database, which is the official site that provides access to most public securities documents and information filed by public companies and investment funds with the Canadian Securities Administrators (CSA).

IV. RESULTS AND DISCUSSION

A. Descriptive Statistics

Table I shows the descriptive statistics related to the continuous variables collected from the 116 Canadian IT companies in the sample. The mean earnings per share (EPS) is negative.

TABLE I DESCRIPTIVE STATISTICS FOR CONTINUOUS VARIABLES

	N	Min	Max	Mean	Std. Dev
EPS	116	-13.1	4.4	-.130	2.401
BVS	116	-.239	13.570	2.821	3.651
Price	116	.005	268.0	11.905	36.772
Size	116	10.09	23.110	18.026	2.302
Leverage	116	.070	59.403	1.618	7.752
Growth	116	.463	999.990	90.210	280.717

In fact, 41% of firms in the sample reported a net loss for the 2012 fiscal year (see Table II), which justifies the inclusion in our models of the control variable Loss. About 72% of the firms in the sample issued executive stock options and 46% of the firms had taken concrete actions to ensure that their executives comply with their code of ethics.

TABLE II FREQUENCY OF DUMMY VARIABLES

	Frequency	Percentage
OPT	84	72.4
ETH	53	45.8
Loss	48	41.4

If we divide the sample into two subgroups according to whether or not options are granted to officers, the two subgroups show no significant difference with respect to the independent variables that test the value relevance of accounting information (see Table III).

Table IV shows that if we divide the sample into two subgroups depending on the variable Ethics, we find that firms showing a high level of business ethics have a larger size and a higher growth opportunity than do firms with weak business ethics.

B. Correlation between Variables

In this section, the univariate relationships between the dependent variable (Price) and the independent variables are examined, and a potential multicollinearity problem between the independent variables is sought. Table V presents the Pearson correlation matrix. The matrix shows positive and significant correlations between stock prices and earnings per share and between stock prices and book value per share. Of the two independent variables, book value per share shows the strongest relationship with stock prices. This is in line with [5], who shows that over time, the importance of book value has increased at the expense of earnings. One interaction term shows a significant correlation with stock prices. BVS*ETH is positively correlated with stock prices as expected.

Regarding the correlation between the independent variables, although some correlations are significant, no severe multicollinearity problem between the independent variables was identified in that the correlation coefficients are relatively low (generally below 0.7).

TABLE III MEAN DIFFERENCES – VARIABLE OPT

	OPT	N	Mean	Mean Difference	Std. Error Difference	Sign. (2-tailed)
EPS	1	84	.249	.528	.355	.140
	0	32	-.279			
BVS	1	84	2.401	-1.154	.785	.134
	0	32	3.555			
Size	1	84	17.831	-1.509	.486	.298
	0	32	18.340			
Leverage	1	84	1.990	1.203	1.653	.468
	0	32	.787			
Growth	1	84	79.635	-48.048	59.753	.423
	0	32	127.683			

TABLE IV MEAN DIFFERENCES – VARIABLE ETH

	ETH	N	Mean	Mean Difference	Std. Error Difference	Sign. (2-tailed)
EPS	1	53	-.032	-.252	.317	.430
	0	63	.220			
BVS	1	53	3.310	1.004	.686	.146
	0	63	2.306			
Size	1	53	18.465	.893	.428	**.039**
	0	63	17.572			
Leverage	1	53	2.758	2.216	1.457	.131
	0	63	.542			
Growth	1	53	146.15	106.88	52.278	**.043**
	0	63	39.271			

TABLE V PEARSON CORRELATIONS

	Price	EPS	BVS	BVS*OPT	BVS* ETH	BVS* OPT* ETH	Size	Lev	Growth	Loss
Price	1									
EPS	.288**	1								
BVS	.574**	.118	1							
BVS*OPT	.094	.280**	.716**	1						
BVS*ETH	.601**	.090	.718**	.441**	1					
BVS*OPT* ETH	.057	.173	.564**	.723**	.711**	1				
Size	.332**	-.073	.688**	.489**	.606**	.467**	1			
Lev	-.042	.002	-.118	-.082	-.071	-.045	-.498**	1		
Growth	-.066	.026	-.251**	-.173	-.164	-.105	-.404**	.516**	1	
Loss	-.239*	-.347**	-.382**	-.322**	-.207*	-.161	-.310**	.137	-.135	1

** Correlation is significant at the .01 level (2-tailed). * Correlation is significant at the .05 level (2-tailed).

C. Regression Analysis

Table VI shows the results of five different regressions between stock prices and several independent variables. Equation (1) replicates the basic Ohlson [3] model. This model reports a significant and positive association between EPS and prices and between BVS and prices. These associations are as expected and are consistent with Ohlson's results.

In equation (2), we added all the control variables to the basic model. The associations between EPS and prices and between BVS and prices remain positive and significant. None of the control variables shows a significant association with prices.

In equation (3), we add the interaction variable BVS*OPT. This addition indicates whether executive stock option award increases the value relevance of accounting numbers. The results show that the explanatory power of the model improves. The R^2 of the regression model increases from .397 (equation 2) to .721 (equation 3). The positive and significant associations between prices and EPS and BVS hold. The association between prices and BVS*OPT is highly significant and positive. This suggests that the granting of options to executives gives investors confidence in the use of accounting information in their decision making process. It seems that investors ignore the scandals related to executive stock options.

Equation (4) tests the association between business ethics and value relevance. We add in this equation the interaction BVS*ETH. The positive and significant associations between prices and EPS, BVS and BVS*OPT hold. The coefficient of BVS*ETH is positive as expected but not significant.

The full model Equation (5) includes all our independent variables. Our latest addition is that of the interaction BVS*OPT*ETH. The results are interesting. First, the association between price and EPS remains positive and significant. However, the association between price and BVS is no longer significant and the association between price and BVS*OPT becomes negative and insignificant. The association between price and BVS*ETH is positive and significant as expected. Finally, the association between price and BVS*OPT*ETH is positive and highly significant as expected. It seems that executive stock option award does not suffice to improve the quality of financial reporting (the coefficient of BVS*OPT is negative and not significant). Rather, the fact that investors perceive that the level of business ethics in a firm is high ensures that the quality of its financial reporting is better when executives are awarded stock options.

TABLE VI MULTIPLE REGRESSION (DEPENDENT VARIABLE: Price)

	Predicted value	Eq (1)	Eq (2)	Eq (3)	Eq (4)	Eq (5)
Intercept		-3.103	-9.022	-26.159	-14.971	-34.035
(t-value)		(-.865)	(-.233)	(-.937)	(-.512)	(-1.190)
EPS	+	3.630***	4.053***	9.212***	9.105***	9.626***
(t-value)		(3.184)	(3.161)	(6.871)	(6.798)	(7.453)
BVS	+	5.943***	6.440***	11.684***	10.543***	3.807
(t-value)		(7.182)	(5.023)	(10.546)	(7.367)	(1.488)
BVS*OPT	?			9.895***	9.264***	-2.493
(t-value)				(9.809)	(8.236)	(-1.028)
BVS*ETH	+				1.449	8.271***
(t-value)					(1.253)	(3.373)
BVS*0PT*ETH	+					8.596***
(t-value)						(3.117)
Size	?		.048	1.166	.577	1.773
(t-value)			(.022)	(.732)	(.349)	(1.088)
Lev	?		-.161	.010	-.041	.102
(t-value)			(-.303)	(0.028)	(-.109)	(.285)
Growth	+		.012	.009	.008	.007
(t-value)			(.711)	(.771)	(.663)	(.599)
Loss	-		7.397	5.676	4.426	4.076
(t-value)			(1.054)	(1.144)	(.877)	(.844)
R^2		.389	.397	.721	.725	.752
F		32.798	10.883	34.648	30.697	30.923
P Value		< .01	< .01	<.01	< .01	< .01
N		116	116	116	116	116

*** Correlation is significant at the .01 level. ** Correlation is significant at the .05 level

V. CONCLUSION

The objective of the present study was to test the improvement of the quality of financial reporting when firms award executive stock options. We add in our regression model a variable that measures the level of business ethics. To our knowledge, no previous study has examined the moderating effect of this variable on the relevance of accounting information.

This study found that the presence of executive stock options seems to be interpreted positively by investors, increasing their confidence in the accounting information reported during decision making only when they perceive that the level of business ethics in these firms is high.

Nonetheless, the study has limitations. First, the population comprised high-tech companies exclusively. Perhaps perceptions of investors in high-technology firms differ significantly from those who invest in other sectors,

which would limit the scope of the results obtained. Lastly, our measure of perceived business ethics level is not perfect. Indeed, the level of business ethics is hardly observable. We relied on the information contained in management proxy circulars to identify concrete actions taken by firms to enforce their code of ethics.

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